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| 10/583,598 | 06/20/2006 | Anna-Liisa Tammi | PX/3-23165/A/RAI 65/PCT | 4541 |
| 324 7590 02/27/2009 JoAnn Villamizar Ciba Corporation/Patent Department 540 White Plains Road P.O. Box 2005 Tarrytown, NY 10591 | | | | |
| EXAMINER CORDRAY, DENNIS R | | | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/583,598

Applicant(s)

TAMMI ET AL.

Examiner

DENNIS CORDRAY

Art Unit

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 11-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SE-US)
Paper No(s)/Mail Date 9/18/2006
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 5 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 recites the limitation "the paper to be treated" in Claim 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 8 recites applying the combination to a paper web "at a separate calender before or during calendering." It is not clear how the application is made at a separate calender before calendering. Is the combination applied by a separate calender and then the treated web further treated by an additional calendering step? Is the combination applied at a separate calender immediately prior to calendering by said separate calender?

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-6, 8, 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Schliesman et al (6140406) as evidenced by Smook (Handbook for Pulp and Paper Technologists).

Claims 1-3, 6, 8 and 11: Schliesman et al discloses a method of coating paper to provide improved printability comprising applying an ink-receptive coating to one or both sides of a substrate, the aqueous coating comprising pigment, binder, sizing agent and cationic fixing agent. The sizing agent can comprise from 0.5 to 5% alkyl ketene dimer blended with 5-15% other sizing agent such as styrene-maleic anhydride (the ratio of the two overlays the claimed ratio). The paper web substrate can be a groundwood (mechanical pulp) sheet (Abs; col 2, lines 33-43; col 3, lines 32-40; col 6, lines 34-42; col 9, lines 1-4). Calendering the ink receiving coating layer is claimed (Claim 23). On machine calendering, off machine (separate) calendering, and supercalendering are alternative methods of calendering well known in the art (see Smook, p 273 if evidence is needed) or, at least any of the calendering methods would have been obvious to one of ordinary skill in the art.

Claim 4: The coating comprises water, thus has moistening water.

Claim 5: Calendering the paper prior to coating is not disclosed.

Claim 12: Papers made by the method are disclosed (cols 10-14, Examples 1-4).

3. Claims 1-8 and 11-13 are rejected under 35 U.S.C. 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Pawlowska et al (US 2006/0037512) as evidenced by Smook (Handbook for Pulp and Paper Technologists).

Claims 1-3, 8 Pawlowska et al discloses a method of sizing paper comprising applying to at least one surface an emulsion comprising alkenylsuccinic anhydride (ASA) and/or alkyl ketene dimer (AKD), a starch or water soluble polymer and, in some embodiments a surface sizing agent such as a styrene-maleic anhydride copolymer (SMA) (Abs; p 2, pars 23 and 24; p 3, par 29; p 6, par 55; p 7, par 59; p 8, pars 76 and 77). Groundwood (mechanical) pulps are disclosed (p 6, par 58).

Pawlowska et al discloses that the treated paper eliminates deposition or sticking at the calender stack, thus implicitly disclosing that the paper is calendered after treatment (p 3, par 25; p 8, par 75). On machine calendering, off machine (separate) calendering, and supercalendering are alternative methods of calendering well known in the art (see Smook, p 273 if evidence is needed) or, at least any of the calendering methods would have been obvious to one of ordinary skill in the art.

Claim 4: The disclosed emulsions comprise water, thus have moistening water.

Claim 5: Calendering is not disclosed prior to coating.

Claim 6: The ratio of ASA or AKD to surface sizing agent (or SMA) is from about 1:0.2 to 1:50, which overlays the claimed range (p 6, par 55).

Claim 7: Pawlowska et al discloses that the ASA or AKD is applied to the paper in an amount of about 0.2 to about 10 lb/ton of dry paper, or from about 0.005 wt-% to about 1 wt-% (p 7, pars 60 and 61). Treated papers having a basis weight from about

18 to about 400 gsm are disclosed (p 6, par 58; p 7, pars 64-65). Using the disclosed amounts of ASA or AKD applied, the ratio of ASA or AKD to SMA, and the basis weights of the paper, the amount of application of ASA or AKD and SMA overlays the claimed range.

Claims 10-12: Paper products made from treated substrates are disclosed. The paper made can be any paper or board. Newsprint, magazines, catalogs, books, commercial printing, many of which use rotogravure printing paper are mentioned (p 6, pars 57 and 58; p 7, par 60).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ceniso et al (6162328) in view of Smook (Handbook for Pulp and Paper Technologists).

Claims 1-3, 8 and 9: Ceniso et al discloses a method of improving the printability of paper and its performance on high-speed end-use machinery by sheeting and drying an aqueous pulp suspension, then applying to at least one surface a composition comprising a cellulose reactive size and a cellulose non-reactive size. The cellulose reactive size can be alkenyl ketene dimer (AKD) and is applied at a level of

about 0.005 to about 0.5 wt-% based on the dry weight of the paper. The cellulose non-reactive size can be a styrene-maleic anhydride copolymer (SMA) and is also applied at a level of about 0.005 to about 0.5 wt-% (Abs; col 2, lines 41-60; col 3, lines 54-67; col 6, line 64 to col 7, line 28). The paper comprises mechanical pulp (col 8, lines 18-26).

Cenisio et al does not disclose the moisture content of the dried paper prior to coating. However, the sheeting and drying is carried out by methods well known in the art (col 8, lines 27-28). Dried paper typically has a moisture content less than 15% or, at least, the claimed moisture content would have been obvious to one of ordinary skill in the art.

Cenisio et al does not disclose calendering the treated paper.

Smook teaches that most paper grades are calendered to obtain a smooth surface for printing (p 272, last par). On machine calendering, off machine (separate) calendering, and supercalendering are alternative methods of calendering well known in the art (see Smook, p 273 if evidence is needed).

The art of Cenisio et al, Smook and the instant invention is analogous as pertaining to methods of making paper. It would have been obvious to one of ordinary skill in the art to calender the paper of Cenisio et al in view of Smook to obtain a smooth surface for printing.

Claim 4: The AKD and SMA are used as an aqueous emulsions or dispersions, thus comprise moisturizing water (col 7, lines 61-63).

Claim 5: The paper is not calendered prior to treatment.

Claim 6: The ratio of cellulose non-reactive size to a cellulose reactive size is from about 0.2:1 to about 50:1, which overlays the claimed range (col 9, lines 10-15).

Claims 7 and 12: Paper having a basis weight of 75 gsm is treated in an example (col 1, line 67). The disclosed total application amounts of AKD and SMA of 0.01 to 1 wt-% overlay the claimed range.

Claims 11 and 13: Newsprint, and rotogravure papers are well known grades and would have been an obvious end product for the paper of Cenisio et al. Any of the calendering methods taught by Smook would have been obvious to one of ordinary skill in the art, thus supercalendered paper would have been obvious.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pawlowska et al or Schliesman et al in view of in Koski (4565155).

Pawlowska et al or Schliesman et al is used as above. Neither Pawlowska et al or Schliesman et al explicitly disclose the moisture content of the dried paper prior to coating. Pawlowska et al does disclose application to dry paper (p 9, pars 82-84).

Koski discloses that the moisture content of a paper web entering the size press is 3-8%. Paper having a lower moisture content is brittle and has too low of a capacity for absorption. Higher moisture results in an excessively high capacity for absorption (col 6, lines 41-46).

The art of Pawlowska et al or Schliesman et al, Smook, Koski and the instant invention is analogous as pertaining to sizing paper. It would have been obvious to one of ordinary skill in the art to dry the paper web to within the claimed moisture content in

the process of Pawlowska et al or Schliesman et al in view of Koski to obtain optimum absorption of the sizing materials.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cenisio et al in view of in view of Smook and further in view of Koski (4565155).

Cenisio et al and Smook are used as above. Cenisio et al does not explicitly disclose the moisture content of the dried paper prior to coating.

The disclosure of Koski is used as above.

The art of Cenisio et al, Smook, Koski and the instant invention is analogous as pertaining to sizing paper. It would have been obvious to one of ordinary skill in the art to dry the paper web to within the claimed moisture content in the process of Cenisio et al in view of in view of Smook and further in view of Koski to obtain optimum absorption of the sizing materials.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Oliver et al (5223473), Conner et al (6183550), Lauzon (6315824), Kondo et al (6824844), (Williams et al (US 2004/0221976) and Goldsberry, III et al (US 2006/0049377) teach other processes of coating groundwood containing paper with compositions that can include AKD and SMA.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DENNIS CORDRAY whose telephone number is (571)272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dennis Cordray/
Examiner, Art Unit 1791

/Eric Hug/
Primary Examiner, Art Unit 1791